Begin #634

UMAROV, M.

Some relief features of the lower part of the Zeravshan Valley.
(MIRA 15:8)
Izv.Uzb.fil.Geog.ob-va 6:52-59 '62.
(Zeravshan Valley—Landforms)

UMAROV, M.

Landforms of the lower Zeravshan Valley and prospects for their
agricultural development. Nauch. truly TashGU no.251. Trudy
Nauch.-issl. otd. Geog. fak. no.3:67-72 '64.

(MIRA 18:3)

PEYMER, I.A.; UMAROV, M.B.; KHROMOV, N.A.

Electrophysiological investigations of psychasthenia and hysteria.
Zhur. nevr. i psikh. 54 no.11:903-914 N '54.   (MLRA 8:1)
    (HYSTERIA, physiology,
       EEG)
    (NEUROSES, OBSESSIVE-COMPULSIVE,
       psychasthenia, EEG)
    (ELECTROENCEPHALOGRAPHY, in various diseases,
       hysteria & psychasthenia)

UMAROV, M. U.

   "Water and Nutritional Regimes of Irrigated Meadow Soils Under
Various Cultivation Conditions." Cand Biol Sci, Central Asia State
U, Inst of Soil Sciences, Acad Sci Uzbek SSR, Tashkent, 1953.
(RZhBiol, No 3, Oct 54)

   Survey of Scientific and Technical Dissertations Defended at USSR
Higher Educational Institutions (10)

So: Sum. No. 481, 5 May 55

KIMBERG, N.V.; UMAROV, M.U.

Soil science in Uzbekistan during the past 40 years. Izv. AN Uz.
SSR. Ser. biol. nauk no.4:57-66 '57.   (MIRA 11:9)
                    (Uzbekistan--Soil research)

UMAROV, M.U.; RYZHOV, S.N., akademik, otv.red.; TUMASHEVSKAYA, E.S.,
red.izd-va; GOR'KOVAYA, Z.P., tekhn.red.

[Water and nutrient balance of irrigated meadow soils under
various conditions of cultivation] Vodnyi i pitatel'nyi
rezhimy oroshaemoi lugovoi pochvy razlichnogo kul'turnogo
sostoianiia. Tashkent, Izd-vo Akad.nauk USSR, 1958. 116 p.
(MIRA 12:9)

1. Akademiya sel'skokhozyaystvennykh nauk UzSSR (for Ryzhov).
    (Soils) (Soviet Central Asia--Irrigation farming)

GUSSAK, V.B.; KIMBERG, N.V.; UMAROV, M.U.;.MAKHSUDOV, Kh.M.

Some data on the extent of erosion in Uzbekistan, its aftereffects
and control measures. Uzb.biol.zhur. no.1:73-81 '59.
(MIRA 12:7)

1. Institut pochvovedeniye AN UzSSR.
    (Uzbekistan--Erosion)

MERKOV, B.P. (Moskva); GAUER, Z.Ye. (Moskva); KOBELEV, M.V.; SYCHEV, K.I. (Karaganda); UMAROV, M.U. (Moskva); SHUTLIV, F.A., kand.geol.-mineral.nauk

News, events, facts. Priroda no.12:99-109 D '62.   (MIRA 15:12)

1. Donetskaya geologicheskaya partiya, Novo-Troitskoye, Donetskaya obl. (for Kobelev). 2. TSentral'nyy sovet Vserossiyskogo obshchestva okhrany prirody, Moskva (for Shutliv).

(Science news)

GENUSOV, A.Z.; KIMBERG, N.V.; UMAROV, M.U.

First International Seminar on the Classification and Mapping of
Soils of Asia. Pochvovedenie no.2:108-110 F '63.   (MIRA 16:3)
(Asia—Soils—Maps) (Asia—Soils—Classification)

UMAROV, M.U. (Samarkand)

Irrigation farming in the lower reaches of the Zeravshan. Priroda 53 no.1:
114-117 '64.
(MIRA 17:2)

KOVDA, V.A., otv. red. LOBOVA, Ye.V., doktor sel'khoz. nauk,
otv. red. (Moskva); TIMBERG, N.V.; red. (Tashkent);
MAMYTOV, A.F., red. (Frunze); UMAROV, M.U., red.

[Geography and classification of the soils of Asia]
Geografiia i klassifikatsiia pochv Azii. Moskva,
Nauka, 1965. 257 p.   (MIRA 18:8)

1. Akademiya nauk SSSR. Pochvennyy institut im. V.V.
Dokuchayeva. 2. Chlen-korrespondent AN SSSR (for Kovda).

UMAROV, S.

Meat industry of Uzbekistan. Mias. ind. SSSR 27 no.1:30-33 '56.
(MLRA 9:6)

1.Ministr promyshlennosti myasnykh molochnykh produktov Uzbek-
skoy SSR.
(Uzbekistan--Meat industry)

UMAROV, S.

Commercial fattening of livestock in Uzbekistan. Mias.ind.SSSR 27 no.2:39-42 '56. (MLRA 9:8)

1. Ministr promyshlennosti myasnykh i molochnykh produktov Uzbekskoy SSR.
(Uzbekistan--Swine--Feeding and feeding stuffs)

UMAROV, S.; IVANOV, I.; SOBOLEV, A.; KRASNOV, V.; VASILEVSKIY, I.;
POTAPKIN, I.; IL'ICHEV, N.; PIZENGOL'TS, M.; SOKRATOV,K.;
CHURSIN, A.; KAUGER, V.; VOLOVODOV, A.; BAZARYA, M.

Issuing credit to collective farms should be equal to the
standard of the new tasks. Den. i kred. 16 no.4:3-26 Ap '58.

(MIRA 11:5)

1.Upravlyayushchiy Uzbekskoy kontoroy Gosbanka (for Umarov).
2.Zamestitel' upravlyayushchego Rostovskoy oblastnoy kontoroy
Gosbanka (for Ivanov). 3. Upravlyayushchiy proizvodstvenno-ekspluata-
tsionnogo otdela Sakhalinskoy oblastnoy kontory Gosbanka (for Sobolev).
4.Nachal'nik proizvodstvenno-ekspluatatsionnogo otdela Sakhalinskoy
oblastnoy kontory Gosbanka (for Krasnov). 5.Zamestitel'
upravlyayushchego Belorusskoy respublikanskoy kontoroy Gosbanka
(for Vasilevskiy). 6.Nachal'nik otdela kreditovaniya sel'skogo
khozyaystva i zagotovok Ukrainskoy respublikanskoy kontory
Gosbanka (for Potapkin). 7. Upravlyayushchiy Mordovskoy
respublikanskoy kontoroy (for Il'ichev). 8. Starshiy prepodavatel'
Voronezhskogo sel'skokho zyaystvennogo instituta (for Pizengol'ts).
9. Saratovskiy ekonomicheskiy institut (for Sokratov).
10. Upravlyayushchiy Sovetskim otdeleniym Gosbanka Krasnodarskogo
kraya (for Chursin). 11. Upravlyayushchiy Gorodishchenskim
otdeleniyem Gosbanka Penzenskoy oblasti (Kauger). 12. Upravlyayushchiy
Zherdevskim otdeleniyem Gosbanka Tambovskoy oblasti (for Volovodov).
13. Nachal'nik Upravleniya sel'skogo khozyaystva i zagotovok
Gosbanka (for Bazarya) (Agricultural credit)

UMAROV, S.; KNIVA, A.; KOROBKOV, N.; CHESALIN, I.

Organization of currency circulation in economic regions. Den.i kred. 17 no.5:8-19 My '59. (MIRA 12:10)

1. Upravlyayushchiy Uzbekskoy respublikanskoy kontoroy Gosbanka (for Umarov). 2. Upravlyayushchiy Litovskoy respublikanskoy kontoroy Gosbanka (for Kniva). 3. Upravlyayushchiy i nachal'nik otdela denezhnogo obrashcheniya Moskovskoy oblastnoy kontory Gosbanka (for Korobkov, Chesalin).
(Money)

UMAROV, S.E.

One atypical hallucinative phenomenon in acute alcoholic
psychoses. Trudy Dush. med. inst. 61:79-88 '63.   (MIRA 17:5)

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UMAROV, S. U.

Mbr., Academy of Sciences of Uzbek SSR

"Central Asis State University", Biul. Sredneaz. un., no. 25, 1947

UMAROV, S. U.

Umarov, S. U. "On Louisville's theorem for system with anisotropic phase space," Trudy Fiz,-tekhn. in-ta (Akad. nauk Uzbek. SSR), Vol II, Issue 2, 1949, p. 5-13

SO: U-5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1949)

UMAROV, S.U.; LEVASHEV, A.Ye.

Gibbs distribution and systems not reduced to normal conditions.
Trudy FTI AN Uz SSSR 3:5-12 '50.   (MIRA 11:4)

1. Deystvitel'nyy chlen AN UzSSR (for Umarov).
                          (Statistical mechanics)

UMAROV, S. U., AVAN'YANTS, G. M., NURVICH, L. L.

"Secondary Electron Paths in a Metal and a Dielectric, Related to Electron Collisions"
Tr. Fiz. Tekn. Inst. AN Uzbekskoy SSR, 5, 1955, pp 3-25

Energy losses of secondary electrons in a metal and a dielectric are computed, in relation to electron collisions, in classical approxima- tion, agreeing within certain limits with quantum mechanical computa- tion. The electron gas in a metal is considered to obey Fermi's statistics. Numerical values of free paths are obtained by means of substitution in the expressions of energy losses of numerical values of work function, internal potential, breadth of forbidden zone and approx- imative integration. (RZhFiz, No 2, 1955)

SO: Sum. 432, 12 May 55

UMAROV, S. U.

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Angular distribution of reflected ions. S. U. Umarov, G. M. Avak'yants, and I. U. Guryan. Doklady Akad. Nauk Uzbek. S.S.R. 1953, No. 6, 13-17; Referat. Zhur., Fiz. 1955, No. 7312.—A theoretical study of the distribution function according to angles and energy of ions which are reflected from the surface of a solid substance. It is assumed that the dispersion of an ion upon an atom is isotropic and that the extent of the dispersion does not depend upon the energy of the ion. A group of falling ions is normal toward the surface of a metal. In order to calc. the numerous dispersions which are possible, the unknown function of probability for distribution of the ions according to angles and energy can be expressed in the form: $F(\theta, E) =$

$\sum_{n=1}^{\infty} \varphi_n(\theta) \psi_n(\theta, E)$. Here $\psi_n(\theta)$ is the probability of the ion's departure from the target at an angle θ after n collisions, $\psi_n(\theta, E)d \cdot E$ is the probability that energy of the ion after n collisions lies between E and $E + E$. A calcn. of the function of $\varphi_n(\theta)$ is made for single, double, and triple dispersions, and then a general expression for $\varphi_n(\theta)$ is given.
Marjorie Ketner

UMAROV, S. U.

Distribution of reflected ions according to energy. S. U. Umarov, G. M. Avak'yants, and L. G. Gurvich. *Doklady Akad. Nauk Uzbek. S.S.R.* 1955, No. 8, 23-7; *Referat. Zhur., Fiz.* 1955, No. 7313.—A method is given for calcg. the distribution according to energy of ions reflected from the surface of a solid substance. For a single collision of an ion with a surface atom, the distribution function for reflected ions according to angles has a delta-like nature. One energy value for the reflected ion corresponds to each angle of reflection. For a double collision, the distribution function loses the delta-like nature. A great no. of energy values for the reflected ion correspond to a single value for the angle of reflection. One and the same energy value for the reflected ion can be observed for the entire interval of reflection angles, but with different probability. Cf. preceding abstr.   Marjorie Ketner

UMAROV, S. U., and Gurvich, L. G.

"Contact Theory Metal-Semiconductor"
Dokl, AN UzSSR, No 11, 1954, 3-8

The volt-ampere characteristic of the contact metal-semiconductor is computed by simultaneous solution of Poisson's equation and the equation of diffusion. At variance with works by S. I. Pekar (ZhETF, 10, 1210, 1940) and W. Z. Schottky (Z. Phys. 118, 539, 1942, the degree of ionization of impurities centers is accounted for. For boundary conditions the current through the contact and the variation of velocity of current carriers under the action of the electric field is taken into account. The condition of high voltage rectification was found to be a strong degree of ionization of impurity centers. (RZhFiz, No 9, 1955)

SO: Sum-No 787, 12 Jan 56

UMAROV, S.U.

Tenth anniversary of the Institute of Physics and Technology.
Trudy FTI AN Uz. SSR 6:3-19 '55.   (MLRA 9:12)

1. Deystv'tel'nyy chlen Akademii nauk Uzbekskoy SSR.
    (Uzbekistan--Physics--Research)

UMAROV, S.U.; GURVICH, L.G.

Theory of metal-semiconductor contacts, Trudy FTI AN Uz. SSR
6:20-23 '55.

(MLRA 9:12)

1. Deystvitel'nyy chlen Akademii nauk Uzbekskoy SSR. (for Umarov).
(Semiconductors) (Electric current rectifiers)

UMAROV, S. U.

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USSR / Electronics

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, No 9769

Author   : Umarov, S.U., Avak'yants, G.M., Gurvich, L.G.
Inst   : Not given
Title   : Distribution of Reflected Ions by Angles and By Energies

Orig Pub   : Tr. Fiz. - tekhn. in-ta, AN UzSSR, 1955, 6, 34-42

Abstract   : The energy and angle distribution functions are found for
             the ions reflected from the surface of a solid body in the
             case of their normal incidents. For single collision bet-
             ween an ion and an atom, the angle distribution function
             of the ions has a δ-like character.
             Upon increase of the multiplicity of the collisions, the
             δ-nature of the function of distribution is lost.
             Bibliography, 6 titles.

Card   : 1/1

In the present work the volt-ampère characteristics of the contact metal-semiconductors are computed in consideration of the current passing through this contact and of the degree of ionization of the admixture centers. The computation carried out on this occasion does not take the influence exercised by the modification of the average kinetic energy of the electron gas under the effect of the electric field into account. In this case the passage of the current through the semiconductor system can be described by a system consisting of equations for the transport of electricity (diffusion equation) and a POISSON equation. This system of equations and the boundary condition at the contact are explicitly written down. A term neglected by PEKAR is here taken into account. The equations are then put into a new form by the help of a dimensionless length, field strength and concentration. The equations are further transformed and the solution can be set up in form of

an infinite power series $y = \sum_{n=1}^{\infty} a_n x^n$. In the case of a weak ionization of

the admixture centers the coefficients a_n are numerically equal to the coefficients computed by PEKAR. However, the coefficients a_n found here are consider-

ably more simple.
The solution $\quad \mathcal{E} = \gamma + \sum\limits_{n=1}^{\infty} a_n(p-1)^n \quad$ found converges at $p < 2$, i.e. with-

in the domain of reduced concentration of carriers. On certain conditions the
expression for field strength can be considerably simplified by the simple
summation of the series. Also for the voltage drop in the layer near the contact
an expression is written down and also for the additional potential jumps. The
latter formula is considerably simplified in the case of total ionization of
the admixture centers and also in the case of lacking ionization. With equal
electric field strength at the contact the potential jump in the semiconductors
with ionized admixture centers is considerable, i.e. a thousand and even ten
thousand times greater. This is a consequence of the fact that the space
charge layer in the semiconductors with ionized admixture centers extends to a
far greater depth than in a semiconductor with little ionized admixtures. This
is also confirmed by computations. Thus, blocking layers of great extent (which
are able to warrant a sufficiently great voltage drop with inverse direction)
can occur only in semiconductors with mostly ionized admixture centers. The
semiconductors used in engineering (Ge,Se,Si) possess these properties.

INSTITUTION:

UMAROV, S.U.

USSR/Electricity - Semiconductors   G-3

Abs Jour   : Ref Zhur - Fizika, No 1, 1958, 1317

Author   : Gurvich, L.G., Umarov, S.U.
Inst   : ..
Title   : Effect of Surface Charges on the Properties of the Contact
              Between a Metal and a Semiconductor.

Orig Pub   : Izv. AN UzSSSR, ser. fiz.-matem. n., 1957, No 1, 43-51

Abstract   : A system of differential equations is written for the
              determination of the non-equilibrium concentration of the
              carriers, for the currents, and for the electric fields:
              diffusion equations for the currents, continuity equation,
              and the Poisson equation. The boundary conditions are de-
              termined from the quality of the differences in the car-
              rier flux to the current flowing through the contact.
              The conditions are written for the case of free and com-
              pletely filled surface band. The equations are solved in
              the linear approximation for the region where there is no

Card 1/2

UMAROV, S.U., akademik; KHAYDAROVA, S.

On the theory of heat transfer and electricity in semiconductors.
Dokl. AN Uz. SSR no.10:11-16 '57. (MIRA 11:5)

1. Fiziko-tekhnicheskiy institut AN UzSSR. 2. AN UzSSR (for Umarov).
(Semiconductors)

KASATKIN, A.G., doktor tekhn. nauk; DYTNERSKIY, Yu.I., kand. tekhn. nauk;
UMAROV, S.U.

Calculating columns with fall-through plates. Khim. prom. no.3:
166-173 Ap-My '58.   (MIRA 11:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I.
Mendeleyeva.   (Plate towers)

SOV/68-58-9-11/21

AUTHORS: Dytnerskiy, Yu.I. (Candidate of Technical Science),
S.U. Umarov and I.I. Kulik

TITLE: A·New Apparatus for Intensification of Heat and Mass
Exchange Processes (Novyy apparat dlya intensifikatsii
protsessov teplo- i massoobmena)

PERIODICAL: Koks i Khimiya, 1958, Nr 9, pp 43-44 (USSR)

ABSTRACT: The principle of operation of a foam tube column (Fig) is
outlined. It consists of closely packed vertical tubes
enclosed in a column. A gaseous phase is introduced into
the bottom of the column and through a distributor passes
upwards through the tubes. A liquid scrubbing phase is
introduced at the top of the column through a side inlet
and passes down through the tubes forming a foam with the
vapour phase. As the foam moves downwards through the
tubes the separation of the gas and liquid takes place.
The liquid phase leaves the column through hydraulic seal,
while the gas leaves through the outlet at the top of the
column. The efficiency of the column (75 mm dia, 1200 mm
high, containing 38 tubes 9 mm in dia and 670 mm high) was

Card 1/2

SOV/68-58-9-11/21

A New Apparatus for Intensification of Heat and Mass Exchange
Processes
                tested on the process of purification of coke oven gas
                from hydrogen sulphide by the arsenical-soda solution.
                Mean results are given in the table; the efficiency of
                the column was found to be 130 - 180 times higher than
                that of works' scrubbers.
                There are 1 table, 1 figure and 6 references (4 Russian,
                2 English)

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy Institut im.
             D.I. Mendeleyeva, and Moskovskiy koksogazovyy zavod
             (Moscow Institute of Chemical Technology imeni D.I.
             Mendeleyev, and Moscow Coi e-Gas Works)

Card 2/2

AUTHOR: Umarov, S.U., Professor; President   SOV/26-59-1-14/34

TITLE: For a Close Tie Between Science and Production (Za tesnuyu
            svyaz' nauki s proizvodstvom)

PERIODICAL: Priroda, 1959, Nr 1, pp 34-36 (USSR)

ABSTRACT: The AS of the Tadzhik SSR is of   very recent origin and
            such scientific departments as the Institut vodnykh problem
            (Institute of Water Problems), Institut astrofiziki (Insti-
            tute of Astrophysics), Institut seysmostoykogo stroitel'-
            stva i seysmologii (Institute of Earthquake-proof Building
            and Seismology), the Otdel fiziki i matematiki (Department
            of Physics and Mathematics),   and other
            branches have been reorganized now. The opening and explo-
            ration of lead, zinc, wolfram, antimony, mercury, bismuth,
            and arsenic deposits in the Republic are a result of its
            Academy's scientific work. Other natural riches now being
            exploited include fluorspar, celestine, common salt, rock
            crystal, optical fluorite, mica, asbestos, hard coal and
            lignite, oil, natural gas and oil shale. The mining and
            construction-material industries are being developed
Card 1/3   correspondingly. Due to the scientific progress of agri-

SOV/26-59-1-14/34

For a Close Tie Between Science and Production

culturists and biologists, the cotton yield per hectare was increased from 1800 kg in 1940 to 2800 kg in 1958. New forage grasses have been successfully planted and new kinds of lifestock introduced. The new 7-Year Plan provides for the development of the production potential of the Vakhsh and Zeravshan Valleys and adjacent areas and the melioration and irrigation of the uplands of the Leninabad Oblast'. In the Vakhsh Valley the production of fine-fiber cotton was 160,000 tons in 1958. Its cotton-bearing areas are being expanded, subtropical and essential-oil plants, fruit and grapes acclimatized, and lifestock-breeding has been started. Oil, natural gas, coal, salt, phosphorite and other mineral resources have also been traced. The Zeravshan Region will soon become one of the principal centers of the metallurgical and fuel industries of the Republic, due to its raw materials, such as coking coal, non-ferrous and rare metals. The water resources of the Leninabad Oblast' with its Kayrakkum and Farkhad GES's and the gigantic Kayrakkum water reservoir on the Syr-Dar'ya river will provide cheap electric power to be used for

Card 2/3

SOV/26-59-1-14/34

For a Close Tie Between Science and Production

conveying enough water to irrigate the Samgarakiy and Dal'verzinskiy
Uplands. Careful study is to be devoted to the magmatism
and metallogeny of Central and North Tadzhikistan and
Darvaz, where numerous deposits of non-ferrous and rare
metals and mineral deposits were discovered. In addition
to research on cosmogony, the study of comets and meteors
and the structure of the upper layers of the earth's atmos-
phere, the Republic's Academy will be particularly concerned
with functional methods in mathematical physics and the
dynamic problems of the elasticity theory, spectral and X-
ray structural analysis, kinetic processes in semiconductor
devices, and large-scale introduction of the latest methods
of applying radioactive isotopes in industry and agriculture.
For several years the Pamirskaya biologicheskaya stantsiya
(Pamir Biological Station) and the Khorogskiy botanicheskiy
sad (Khorog Botanical Garden) have conducted interesting
experiments on agricultural possibilities in the climatic-
ally unfavorable mountain regions. In the near future,
150,000 more hectares will be cultivated for cotton
production. Detailed mapping and description of all
regions of the Republic will follow soon.

Card 3/4

ASSOCIATION: Academy of Sciences of the Tadzhik SSR, Stalinabad

UMAROV, Sultan Umarovich; MOSSTEPANENKO, M.

[Lenin and the development of modern physics] Lenin i
razvitie sovremennoi fiziki. Stalinabad, Tadzhikgosizdat,
1960. 249 p.   (MIRA 15:4)
        (Lenin, Vladimir Il'ich, 1870-1924)
                (Physics)

KELDYSH, M.V.; PALLADIN, A.V.; KUPREVICH, V.F.; ABDULLAYEV, Kh.M.; SATPAYEV, K.I.; MUSKHELISHVILI, N.I.; MAMEDALIYEV, Yu.G.; MATULIS, Yu.Yu.; GROSUL, Ya.S.; PLAUDE, K.K.; KARAKEYEV, K.K.; UMAROV, S.U.; AMBARTSUMYAN, V.A.; BATYROV, Sh.B.; EYKHFEL'D, I.G. [Eichfeld, J.]

Comments by presidents. Nauka i zhizn' 28 no.10:2-17 O '61.
(MIRA 15:1)

1. Prezident Akademii nauk SSSR (for Keldysh). 2. Prezident Akademii nauk Ukrainskoy SSR (for Palladin). 3. Prezident Akademii nauk Belorusskoy SSR (for Kuprevich). 4. Prezident Akademii nauk Uzbekskoy SSR (for Abdullayev). 5. Prezident Akademii nauk Kazakhskoy SSR (for Satpayev). 6. Prezident Akademii nauk Gruzinskoy SSR (for Muskhelishvili). 7. Prezident Akademii nauk Azerbaydzhanskoy SSR (for Mamedaliyev). 8. Prezident Akademii nauk Litovksoy SSR (for Matulis). 9. Prezident Akademii nauk Moldavskoy SSR (for Grosul). 10. Prezident Akademii nauk Latviyskoy SSR (for Plaude). 11. Prezident Akademii nauk Kirgizskoy SSR (for Karakeyev). 12. Prezident Akademii nauk Tadzhikskoy SSR (for Umarov). 13. Prezident Akademii nauk Armyanskoy SSR (for Ambartsumyan). 14. Prezident Akademii nauk Turkmenskoy SSR (for Batyrov). 15. Prezident Akademii nauk Estonskoy SSR (for Eykhfel'd).
(Russia--Economic conditions) (Research)

UMAROV, U.

Raised ground water level in the northwestern part of the
Golodnaya Steppe. Vop. geol. Uzb. no.3:159-163 '62.
(MIRA 16:6)

(Golodnaya Steppe—Water, Underground)

ABUTALIYEV, F.B.; UMAROV, U.; ARTYKOVA, N.

Calculating the prognosis of the level changes of underground
waters using electronic computers. Uzb.geol.zhur. 6 no.4:
83-87 '62.   (MIRA 15:9)

1. Institut geologii i inzhenernoy geologii AN UzSSR.
                    (Water, Underground)
                (Electronic digital computers)

UMAROV, Ye.

Improvement of land drainage and prospects for the development
of cotton growing in the Khorezm Oasis. Izv. AN Azerb.SSR. Ser.
geol.-geog.nauk i nefti no.3:105-115   '63.   (MIRA 16:11)

UMAROV, Ye.

Development of animal husbandry in the Khorezm Oasis. Izv. AN
Azerb. SSR. Ser. geol.-geog. nauk i nefti no.6:33-43 '63.
(MIRA 18:3)

UMAROV, Ye.

Development and distribution of agriculture in the Khorezm Oasis.
Nauch. trudy TashGU no.251. Trudy Nauch.-issl. otd. Geog. fak.no.3:
52-60 '64.
(MIRA 18:3)

S/263/62/000/011/007/022
I007/I207

AUTHOR: Umarov, Yu. R.

TITLE: A device for studying the behavior of mechanical systems under the action of dynamic load

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 32. Izmeritel'naya tekhnika, no. 11, 1962, 21–22, abstract 32.11.160. "UzSSR Fanlar Akad. akhboroti, Izv. AN UzSSR". Ser. tekhn. n.", no. 5, 1961, 30–39

TEXT: Description is given of a photoelectric device for recording the curve of reaction of a definite mechanical system, in the form of an oscillation accelerogram. The device works on the self-modeling principle. The electric simulating-model of the mechanical system with one degree of freedom is subjected to an external electromotive force, whose intensity varies proportional to the intensity of acceleration of rapidly fluctuating processes. The external mechanical action recorded on the accelerogram, is transformed by a photoelectric convertor into an electromotive force of the electric system. From model characteristics varying under external action, it is possible to infer on the behavior of the mechanical system investigated under the effect of rapidly changing load and hence to plot spectral curves of the external action. The device permits the obtaining of spectral curves of the effect of vibrations on a mechanical system having a certain range of natural attenuation. Thus, for instance, the method permits the recording of earthquake curves, showing intensity and distance from the center of the earthquake as well as the period and attenuation of vibrations of the structure. There are 4 figures and 16 references.

[Abstracter's note: Complete translation.]

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29651
S/167/61/000/005/003/003
D249/D302

Umarov, Yu. R.

An instrument for investigating the behavior of mechanical systems under dynamic loads

Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya tekhnicheskikh nauk, no. 5, 1961, 30-39

AUTHOR:

TITLE:

...sign of a photoelectric analyzer for evaluating the spectrum used in determining earthquake stresses in described. This design is based on the following... accelerogram record moving in front of a photoelec... the accelerations into voltage fluctuations... re an L-C oscillating circuit with variable tun... oscillations being measured oscillographically. ...fundamental relations for oscil... ...degree of freedom, the author describes ...film-driving mechanism together with its ...and gives a fuller account of the fac_

29651
S/167/61/000/005/003/003
D249/D302

AUTHOR: Umarov, Yu. R.

TITLE: An instrument for investigating the behavior of me-
chanical systems under dynamic loads

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya tekh-
nicheskikh nauk, no. 5, 1961, 30-39

TEXT: The design of a photoelectric analyzer for evaluating the
acceleration spectrum used in determining earthquake stresses in
structures is described. This design is based on the following
principle: An accelerogram record moving in front of a photoelec-
tric cell transforms the accelerations into voltage fluctuations
which in turn excite an L-C oscillating circuit with variable tun-
ing, the resulting oscillations being measured oscillographically.
After a review of the fundamental mathematical relations for oscil-
lating systems with one degree of freedom, the author describes
briefly the accelerogram film-driving mechanism together with its
associated optical system and gives a fuller account of the fac-

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D249/D302

An instrument for investigating ...

tors governing the choice of a suitable photocell. Two types of photocell were available, the gas-filled oxygen-cesium and the vacuum cesium antimonate cell. The latter was selected because cf its better long-term stability. The light sensitivity of the cell was 125 μA/lumen. Photomultipliers were not regarded as suitable for the purpose although their superiority with respect to light sensitivity was realized. The electronic circuit, to which a photo-signal is applied consists of a cathode follower followed by a high gain d.c. amplifier, second cathode follower, and the L-C oscillating analog circuit with variable capacitance. The voltage across the capacitor is taken to the oscillograph via yet another cathode follower. Calculation of the L-C circuit is as follows. With the actual earthquake frequencies varying between 0.5 and 5 c/s, the time scale of the existing accelerograms of 1 sec/cm and with the necessary inductor Q-factor of 20-30, the required values of L and C become impractically large. In order to reduce them, the speed of the moving film is increased to 60 cm/sec which gives a scale factor of 60. With this scale factor and for

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D249/D302

An instrument for investigating ...

a fixed value of L = 5.6 Henry, the resonant frequency range of the circuit becomes 30 - 300 c/s and that of the capacitance 0.05 - 5 μF. There are 4 figures and 16 references: 12 Soviet-bloc and 4 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: M. A. Biot, A mechanical analyzer for the prediction of earthquake stresses, Bulletin of the Seismological Society of America, 1941; W. C. Housner, G. D. McCann, The analysis of strong-motion earthquake recors with the electric analog computer, Bulletin of the Seism. Soc. of America, 1948; G. W. Housner, Behavior of structures during earthquales, Journal of the Engineering Mechanics, October 1959; J. Markus, Electronic circuits in engineering, 1954.

ASSOCIATION: Institut mekhaniki AN UzSSR (Institute of Mechanics of the AS UzbekSSR)

SUBMITTED: July 1, 1960

Card 3/3

UMAROV, T.

UMAROV, T.: "Methods and times of pre-sowing soaking of fuzzy and chemically
    defuzzed cotton seeds with various soaking times." Min Higher Education
    USSR. Tashkent Agricultural Inst. Tashkent, 1956. (Dissertation for the
    Degree of Candidate in Agricultural Sciences.)

Knishnaya letopis', No. 30, 1956. Moscow.

ACCESSION NR: AP4044798

S/0166/64/000/003/0075/0076

AUTHOR: Kiv, A. Ye., Umarova, F. T.

TITLE: The energy of displacement of the nodal atoms in crystals of iron

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 3, 1964, 75-76

TOPIC TAGS: iron, defect formation, displacement, atomic displacement, electron escape, iron crystal, elastic displacement

ABSTRACT: The authors point out that determination of the threshold energies for the formation of elastic displacements of atoms is important for a clear explanation of the processes underlying defect formation. The present paper is concerned with determining the region of elastic displacement of atoms in iron crystals, in relation to the speed and energy of electrons escaping from these displaced atoms. The basic result is that if p(t) is the probability of a displacement when electrons escape with energy t (measured in Mev), and σ r is the region of transmission of energy to the atom by the electron in the interval t, ttdt, then the region of atomic displacement is given by   (1)

$$\sigma_d(E) = \int_{E_d}^{E_m(E)} p(t)\, \sigma_r(t)\, dt$$

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ACCESSION NR: AP4044798

This result agreed well (within 5-7%) with observed displacements (see Fig. 1. in the Enclosure). Orig. art. has: 1 figure and 4 formulas.

ASSOCIATION: Institut yadernoy fiziki AN Uz SSR (Institute of Nuclear Physics, AN Uz SSR)

SUBMITTED: 01Mar63

ENCL: 01

SUB CODE: NP

NO REF SOV: 000

OTHER: 002

Card 2/3

KIV, A.Ye.; UMAROVA, F.T.

Energy of heteroatom displacement in iron crystals. Izv. AN Uz.
SSR Ser. fiz.-mat. nauk 8 no.3:75-76 '64.

(MIRA 17:10)

1. Institut yadernoy fiziki AN UzSSR.

ACC NR: AP6036962   (A, N)   SOURCE CODE: UR/0181/66/008/011/3226/3231

AUTHOR: Gerasimov, A. B.; Konovalenko, B. M.; Ryvkin, S. M.; Umarova, Kh. F.; Yaroshetskiy, I. D.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Photoelectret state in silicon with radiation defects

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3226-3231

TOPIC TAGS: photoelectret, crystalline silicon, radiation effect

ABSTRACT: The photoelectret state (PS) and the dependence of its properties on the concentration of free carriers and the concentration of local levels in the forbidden band were studied on two groups of n- and p-type silicon samples with different positions of the Fermi level after irradiation with fast electrons (which produced radiation defects). The dependence of dark polarization on the time of application of the polarizing voltage and its magnitude was measured, this being one of the chief characteristics of PS. Differences in the PS of the two groups of samples were also manifested in the persistence of polarization. The spectral selectivity of the PS was also determined. Analysis of the spectral curves showed characteristics corresponding to certain local levels of radiation defects; the curves break off abruptly in the shortwave range on passing to bipolar excitation, starting at quantum energies at

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ACC NR: AP6036962

which the formation of minority carriers is possible. The results of the study of PS during bipolar excitation are interpreted in the light of the substantial role played by optical charge exchange between impurity centers in the observed effect. Authors take this opportunity to thank I. M. Kotina for her assistance. Orig. art. has: 7 figures.

SUB CODE: 20/ SUBM DATE: 07Apr66/ ORIG REF: 009/ OTH REF: 001

Card 2/2

ACC. Nr: L 07007-67   EWT(1)/EWT(m)/EWP(L)/EPF   IJP(c)   AT/JD
APG033561   SOURCE CODE: UR/0181/66/008/010/2994/2998

AUTHOR: Gerasimov, A. B. ; Konovalenko, B. M. ; Kotina, I. M. ; Umarova, Kh. F.

ORG: Physicotechnical Institute imeni A. F. Ioffe AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut) AN SSSR

TITLE: Kinetics of bipolar impurity photoconductivity of silicon with radiation defects

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2994-2998

TOPIC TAGS: photoconductivity, bipolar photoconductivity, radiation, radiation defect, conductivity

ABSTRACT: Silicon samples with radiation defects at T = 77K were observed to be characterized by distinctive kinetics in the increase of their impurity photo-conductivity. An explanation is offered for this phenomenon, which is shown to be related to the bipolarity of impurity excitation, and an approximate computation is made of the kinetics of inverse overcharge for a case of low level excitation. The

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L 09899-67

ACC NR: AP6033561

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cross-section of hole capture at the radiation defect level $E_c-0.40$ ev is determined. Orig. art. has: 7 formulas and 5 figures. [Authors' abstract]

SUB CODE: 20/ SUBM DATE: 28Mar66/ ORIG REF: 004/ OTH REF: 002/

Card 2/2 mle

UNIPOVA, "R. S.,

Gynecology

Mechanism of development of pseudopregnancy.   Akush. i gin. no. 5, 1952.

UMAROVA, Kh.S.

Brucellosis and the female generative organs. Dokl. AN Uz. SSR
no.9:71-73 '57.   (MIRA 11:5)

1.Tashkentskiy gosudarstvennyy meditsinskiy institut. Predstavleno
akademikom AN UzSSR S.Yu. Yunusovym.
                    (BRUCELLOSIS) (GENERATIVE ORGANS, FEMALE)

UMAROVA, Kh.S.

Hormone profile during the minstrual cycle in female
brucellosis patients. Izv.AN Uz.SSR.Ser.med.   no.5:42-46
'59.   (MIRA 13:3)

1. Tashkeutskiy gosudarstvennyy meditsinskiy institut.
     (BRUCELLOSIS) (MENSTRUATION) (HORMONES)

UMAROVA, Kh. S., Cand Med Sci -- (diss) "Effect of various clinical forms of brucellosis on the condition of the genitalia of women ." Tashkent, 1960. 14 pp; (Ministry of Public Health Uzbek SSR, Tashkent State Medical Inst); 300 copies; price not given; (KL, 25-60, 140)

UMAROVA, M.K.

Case of the development of hypothyreosis in a patient with
hyperthyreosis. Med. zhur. Uzb. no.6:70 Je '60.   (MIRA 15:2)

1. Iz endokrinologicheskogo otdeleniya Tashkentskogo gorodskoy
bol'nitsy No.10 (glavnyy vrach - S.S.Salikhov).
                (HYPERTHYROIDISM)

STOLBOVA, A.; UMAROVA, M.U.; UVAROVA, A.I.; VISHNEVETSKAYA, Ye.A.
    TETENKO, N.I., meditsinskaya sestra.

Nurses' councils. Med. sestra 22 no.6:42-45 Je'63.(MIRA 16:9)

1. Predsedatel' Soveta meditsinskikh sester Vladimirskoy ob-
lastnoy bol'nitsy. Detskaya bol'nitsa No.3 Tashkentskoy zhe-
leznoy dorogi (for Umarova). 2. Glavnyy vrach Detskogo kostno-
tuberkuleznogo sanatoriya No.2, Dnepropetrovsk (for Uvarova).
3. Detskoye otdeleniye Krasnodarskoy krayevoy klinicheskoy
bol'nitsy imeni prof. S.V.Ochapovskogo (for Tetenko).
                    (NURSES AND NURSING)

YUNUSOVA, Kh.A.; LOGINOVA, N.S.; UMAROVA, R.F.; KATSNEL'SON, R.A.

Candidomycosis of the oral cavity and diphtheria. Izv.AN
Uz.SSR.Ser.med.   no.5:13-19 '58.   (MIRA 12:5)

1. Tashkentskiy gosudarstvennyy meditsinskiy institut, Klinika
detskikh bolezney i kafedra mikrobiologii.
          (MONILIASIS)   (DIPHTHERIA--BACTERIOLOGY)

KATSNEL'SON, R.A.; UMAROVA, R.F.; IGAMBERDYYEVA, D.I.

Serological diagnosis of diphtheria. Med.zhur.Uzb. no.1:38-43 Ja '59.
(MIRA 13:2)

1. Iz kafedry mikrobiologii (zaveduyushchiy - prof. P.F. Samsonov)
i kliniki detskikh infektsionnykh bolezney (zaveduyushchiy - prof.
Kh.A. Yunusova) Tashkentskogo gosudarstvennogo meditsinskcgo insti-
tuta.

(DIPHTHERIA)

LOGINOVA, N.S.; UMAROVA, R.F.; KATSNEL'SON, R.A.

Materials on the etiopathogenesis of toxic diptheria. Med. zhur.
Uzb. no.3:44-47 Mr '61.   (MIRA 14:5)

1. Iz kafedra mikrobiologii (zav. - prof. P.F.Samsonov) i kliniki
detskikh infektsiy (zav. - prof. Kh.A.Yunusova) Tashkentskogo
gosudarstvennogo meditsinskogo instituta.
                      (DIPHTHERIA)

KUDINOVA, V.S.; SUVOROV, B.V.; UMAROVA, R.U.

Oxidation of organic compounds. Report No.34: Catalytic vapor phase oxidation of n-propylbenzene, n-butylbenzene, and some of their derivatives. Trudy Inst.khim.nauk AN Kazakh.SSR 8:157-162 '62.

(Benzene)   (Oxidation)   (MIRA 15:12)

MUSAYEV, K.Yu.; UMAROVA, Sh.

Effect of watering on the development and distribution of algae
in cotton fields. Uzb. biol. zhur. 6 no.3:30-34 '62. (MIRA 15:6)

1. Tashkentskiy gosudarstvennyy universitet imeni V.I. Lenina.
              (UZBEKISTAN--ALGAE)
         (UZBEKISTAN--COTTON--IRRIGATION)

ACC NR: AR6033654   (N)   SOURCE CODE: UR/0417/66/000/009/0025/0025

AUTHOR: Umarova, Sh, S.; Zakirov, U. B.; Kamilov, I. K.

ORG: none

TITLE: Comparative evaluation of the effects of quaternary galantamine derivatives

SOURCE: Ref. zh. Farmakologiya, khimioterapevticheskiye sredstva, toksikologiya, Abs. 9.54.155

REF SOURCE: Sb. Farmakol. alkaloidov. Vyp. 2. Tashkent, Nauka, 1965, 258-263

TOPIC TAGS: pharmacology, galantamine, alkaloid, drug effect, quaternary amine

ABSTRACT: The pharmacological effects of galantamine hydroxymethylate, hydroxyethylate, hydroxyisopropylate, hydroxybutylate, and hydroxyamylate were studied. In rabbits doses from 0.1—3 mg/kg produced constriction of the pupils, muscular fibrillation and lacrimation. Five to ten mg/kg doses caused peristaltic movements of the intestine, urination, and defecation. Eleven mg/kg doses produced death from respiratory failure. Corresponding tertiary compounds required higher doses to produce the same effects. Galantamine derivatives produced more peripheral neuro-muscular activity than galantamine hydrobromide (ater-

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ACC NR: AR6033654

tiary compound). The most effective compound was galantamine hydroxy-
methylate which, when administered in 0.05 mg/kg doses, increased the
amplitude of muscle contraction by 46%.   [W.A. 50]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

UMAROVA, S.I., vrach; RAYSKIY, N.S., vrach; TARTAKOVSKAYA, I., red.;
SOKOLOVA, A., tekhn. red.

[Longevity] Dolgoletie. Tashkent, Gos.izd-vo "Sredniaia i vys-
shaia shkola," UzSSR, 1961.   84 p.
                    (LONGEVITY)   (MIRA 14:11)

UMAROVA, Sh.S.; KAMILOV, I.K.; POLIYEVTSEV, N.P.

Galanthamine hydroxymetylate and its cholinergic properties.
Farm.alk. no.1:174-180'62.
(GALANTHAMINE)   (PARASYMPATHOMIMETIC AGENTS)   (MIRA 16:9)

UMAROVA, Sh.S.; KAMILOV, I.K., POLIYEVTSEV, N.P.

Effect of galanthamine hydroxymethylate on the action of
arecoline and atropine. Farm.alk. 181-183'62.   (MIRA 16:9)
(GALANTHAMINE) (ARECOLINE) (ATROPINE)

UMAROVA, Sh.S.; KAMILOV, I.K.; POLIYEVTSEV, N.P.

Comparative action of galanthamine hydrobromide and hydro-
xymethylate on neuromuscular conduction. Farm.alk. no.1:
184-189 '62.

(GALANTHAMINE—PHYSIOLOGICAL EFFECT) (NEUROCHEMISTRY)
(MUSCLE)

(MIRA 16.9)

UMAROVA, S.U., kand.med.nauk

Long-term observations in late toxicoses of pregnancy. Zdrav. Tadzh. 8 no. 2:16-18 '61.
(MIRA 14:4)

1. Iz kafedry akusherstva i ginekologii (zav. - doktor med.nauk S.Kh. Khakimova) Stalinabadskogo medinstituta imeni Abuali ibni Sino.

(PREGNANCY, COMPLICATIONS OF)

UMAROVA, S.U., dotsent

Frequency of occurrence and seasonal distribution of late pregnancy
toxemia in a dry subtropical climate. Zdrav. Tadzh. 9 no.1:30-32
Ja-F '62.

(PREGNANCY, COMPLICATIONS OF)   (MIRA 15:4)

UMAROVA, T.; KAL'CHENKO, A.; KUMIN, Ye.

News from schools. Prof.-tekh.obr. 19 no.3:32 Mr '62.
(MIRA 15:4)

1. Direktor Khodzhentskogo kovrovo-tkatskogo professional'no-
tekhnicheskogo uchilishcha No.21 imeni Titova, Tadzhikskaya SSR
(for Umarova).

(Vocational education)

UMAROVA, T.U., aspirant

Sanitary and hygienic characteristics of school workshops
in Tashkent. Med. zhur. Uzb. no.7:22-27 Jl '63.
(MIRA 17:2)

1. Iz kliniki glaznykh bolezney (zav. - dotsent T.Ya.
Kasymov) Tashkentskogo meditsinskogo instituta.

UMAROVA, V.

Water balance of a typical Sierozem used as pasture and long-
fallow land. Nauch. trudy Tash. GU no.204:201-222   '62.
(MIRA 17:9)

ALIYAROV, S.; UMAYEV, N.

Participation of young Azerbaijani students in the revolution of
1905-1907 [in Azerbaijani with summary in Russian]. Dokl.AN Azerb.
SSR 12 no.9:683-690 '56.   (MIRA 9:10)
(Azerbaijan--Revolution of 1905)

UMBERG, V.N.

Provide the paper industry enterprises with modern Soviet
equipment. Bum.prom. 38 no.1:7-8 Ja '63.   (MIRA 16:2)

1. Sovet narodnogo khozyaystva SSSR.
        (Woodpulp industry—Equipment and supplies)

UMBETALIN, S. U.

Umbetalin, S. U. -- "Investigations of the Conditions of Stability of the Rims of the Kounradskiy Open Pit Mine (With Consideration of the Mechanics of the Massif)." Acad Sci Kazakh SSR, Inst of Mining Affairs, Alma-Ata, 1955 (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

UMBETALIN, S.U.

Investigating conditions governing the stability of the sides
of the Kounrad open-pit mine. Vest.AN Kazakh.SSR 16 no.1:
18-25 Ja '60. (MIRA 13:5)
(Strip mining) (Soil mechanics)

UMBET'YAROVA, G.G.

Bicillin treatment for patients with syphilis. Zdrav. Kazakh. 21 no.10:33-36 '61. (MIRA 15:2)

1. Iz otdela sifilidologii (zav.-kand.med.nauk M.M.Vishnyak) Kazakhskogo kozhno-venerologicheskogo instituta.
(SYPHILIS)   (PENICILLIN)

VISHNYAK, M. M., kand. med. nauk; UMBET'YAROVA, G. G., mlad. nauchn.
    sotrud.; RAKHIMOVA, G. K., mlad. nauchn. sotrud.; GUTERMAKHER,
    TS. M., mlad. nauchn. sotrud.; BASARGIN, P. S., mlad. nauchn.
    sotrud.; SHEFFER, A. R., mlad. nauchn. sotrud.

Results of bicillin therapy of syphilis in Alma-Ata. Vest. derm.
i ven. 36 no.6:57 Je '62.   (MIRA 15:6)

1. Iz Kazakhskogo nauchno-issledovatel'skogo kozhno-venerologi-
cheskogo instituta (dir. - kandidat meditsinskikh nauk M. O.
Omarov)

        (BICILLIN)   (ALMA-ATA—SYPHILIS)

L 9429-65   EWT(d)   Pg-4   IJP(c)

ACCESSION NR: AR5006733   S/0044/64/000/012/B037/B037   19 B

SOURCE: Ref. zh. Matematika, Abs. 12B216

AUTHOR: Umbetzhanov, D. U.

TITLE: Application of the method of asymptotic approximation to the quasi-periodic oscillations of non-linear systems

CITED SOURCE: Sb. tr. soiskateley i aspirantov. M-vo vyssh. i sredn. spets. obrazovaniya KazSSR, v.1, no. 1, 1963, 104-112

TOPIC TAGS: control theory, nonlinear system, differential equation, quasi-periodic oscillation, asymptotic approximation, Fourier polynomial

TRANSLATION: The author has investigated the equation   (1)

$$\frac{d^2x}{dt^2} + \omega^2 x = \epsilon f\left(t, x, \frac{dx}{dt}\right).$$

where ϵ is a small parameter, f — a quasiperiodic function of t with frequencies ν_1 and ν_2, being represented by a finite Fourier polynomial, with coefficients which, in their turn, are polynomials in x, $\frac{dx}{dt}$. It is shown that, for the con-

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ACCESSION NR: AR5006733   0

struction of a quasi-periodic solution of equation (1), one can apply the method
of asymptotic determination of Krylov and Bogolyubov. For this purpose, the
equation in partial derivatives

$$\nabla^2 z + \omega^2 z = \varepsilon f(v, u, \nabla \varphi, z, \nabla z).$$ (2)

is investigated, where ∇ is a differential operator

$$\nabla z(u, v) = \frac{\partial z}{\partial u} + \frac{\partial z}{\partial u}.$$ (4)

For $\varepsilon = 0$ equation (2) has a general solution of the form

$$z = a \cos(\omega_1 u + \omega_2 \varphi + \varphi),$$ (5)

where $\omega_1^2 + \omega_2^2 = \omega$, and $a = a(u - v)$, $\varphi = f(u-v)$ are arbitrary twice differentiable functions of the difference u-v. It is assumed that resonance exists,
i.e. that there do not exist integers n_1, n_2, m for which

$$[n_1 \gamma_1 + n_2 \gamma_2] = m\omega.$$

Then it is proposed to find a solution of the equation (2) in the form of the
series

$$z = a \cos \psi + \varepsilon u_1 (a, \psi, \gamma_1 u, \gamma_2 v) + \varepsilon^2 u_2 + \dots,$$ (3)

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ACCESSION NR: AR5006733

where $q + a_1 u + b_1 \varphi + \varphi,$ and the functions

$\equiv, \psi$ are periodic in $\gamma, \gamma \psi, \gamma \psi$ c with period 2π. The quantities a and ψ are determined by the differential equations

$$\nabla a = \varepsilon A_1(a) + \varepsilon^2 A_2(a) + \ldots,$$
$$\nabla \varphi = \omega + \varepsilon B_1(a) + \varepsilon^2 B_2(a) + \ldots. \tag{6}$$

The obvious expressions for the functions $A_i(a), B_i(a), u_i(a, \gamma, v_i u, v_i \varphi)$

are written down and a method of finding $A_4 \ B_4 \ u_1 \ldots$ is indicated.

The sought-for quasi-periodic solution of the former equation is obtained from the expression (3) for $u = \nu t$. Yu. Ryabov.

SUB COD: MA, IE   ENCL: 00

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L 39425-65   EWT(d)   Pz-4   IJP(c)

ACCESSION NR: AR5006735   S/0044/64/000/012/B040/B040

SOURCE: Ref. zh. Matematika, Abs. 12B237

AUTHOR: Umbetzhanov, D. U.

TITLE: Quasi-periodic oscillations of non-linear autonomous systems

CITED SOURCE: Sb. tr. soiskately i aspirantov. M-vo vyssh. i sredn. spets. obrazo-vaniya KazSSR, v. 1, no. 1, 1963, 141-149

TOPIC TAGS: differential equation, linear differential equation, autonomous system, control theory, periodicity, quasiperiodic oscillation

TRANSLATION: The differential equations $\frac{dx_s}{dt} = f_s(x_1, \ldots, x_n, \alpha)$, $s = 1, \ldots, n$, (1)

are investigated, where f_s are analytic functions of the variables $x_1, \ldots, x_n$ and a small parameter α, not necessarily dependent on t. It is assumed that, for $\alpha = 0$, the equation (1) has a quasi-periodic solution (generator) $x_s^0 = \varphi_s(t, \ldots, 0)$, $s = 1, \ldots, n$, c

with frequency basis $\beta_1, \ldots, \beta_n$. The question of the existence of a quasi-periodic sol-ution of equation (1) for $\alpha \neq 0$ is raised. A method is used, the idea of which was

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L 39425-65

ACCESSION NR: AR5006735

reported in an article by V. Kh. Kharasakhal (RZh Mat, 1962, 1B 166). He concludes that, together with (1), a system of differential equations of partial derivatives is to be investigated

$$\frac{\partial x_s}{\partial u_1} + \ldots + \frac{\partial x_s}{\partial u_m} = f_s (x_1, \ldots, x_n, \alpha).$$ (2)

The solution of the latter equation $x_s (u_1, \ldots u_m, \alpha)$, $s = 1, \ldots, u$, is periodic in the variables $u_1, \ldots u_m$ with periods $T_1, \ldots T_n$ respectively and represents for $u_1 = \ldots$

of analogous, known conditions in periodicity of the solution... Poincare. The author writes out these conditions in general form and analyzes them, which allows him to prove, in particular, the theorem: If the autonomous system (1) possesses even one quasi-periodic solution, then it possesses an entire family of such solutions. Yu. Ityahov

ENCL: 00   SUB CODE: MA

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53

AUTHOR: Umbetzhanov, D. U.

TITLE: Applicability of Poincare's small parameter method in the theory of almost-
periodic solutions of systems of nonlinear differential equations

SOURCE: AN KazSSR. Vestnik, no. 7, 1963, 85-88

TOPIC TAGS: differential equation, small parameter, analytic solution, almost-
periodic solution

ABSTRACT: The author considers

$$\frac{dx}{dt} = f(t, x, c),\qquad\qquad (1)$$

where $x = (x_1, x_2, \ldots, x_n)$, $f = (f_1, f_2, \ldots, f_n)$ are n-dimensional vectors, t is an
independent variable, and α is a small parameter. He assumes that the right parts

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of (1) are analytic functions of the variables x in some region G and of the
parameter α for sufficiently small values of α, and are continuous almost-periodic
functions with respect to t with general frequency basis $\nu = (\nu_1, \nu_2, ..., \nu_m)$. He
formulates sufficient conditions for the existence of a unique almost-periodic
solution of (1) analytic in α for sufficiently small α, which tends to the almost-
periodic solution of the corresponding degenerate system. Orig. art. has: 19
formulas.

ASSOCIATION: none

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DLC: HE1621.U5

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DLC: HE1621.U5 1949

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